

## Genus *Rhabdocosma* Meyrick (Lepidoptera: Ypsolophidae) new to China, with descriptions of two new species

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**Abstract:** The genus *Rhabdocosma* Meyrick, 1935 is recorded for the first time in China. Two new species, *R. aurepurpurata* Li sp. nov. and *R. semicircularis* Li sp. nov., are described. Photographs of the adults, the wing venations and the male genitalia are provided.

**Key words:** Microlepidoptera; taxonomy; new record

中国新纪录纹冠翅蛾属 *Rhabdocosma* 二新种记述 (鳞翅目: 冠翅蛾科)

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**摘要:** 纹冠翅蛾属 *Rhabdocosma* Meyrick, 1935 为中国新纪录属。本文记述该属 2 新种, 紫金纹冠翅蛾 *Rhabdocosma aurepurpurata* Li sp. nov. 和半圆纹冠翅蛾 *R. semicircularis* Li sp. nov., 提供了成虫、翅脉及雄性外生殖器特征图。

**关键词:** 小蛾类; 分类; 新纪录

### Introduction

*Rhabdocosma* Meyrick, 1935 is a small genus in the Ypsolophidae, consisting of three species to date. The type species *R. aglaophanes* Meyrick, 1935 and *R. nematopogonites* Sohn, 2014 are distributed in Japan, and *R. dolini* Gershenson, 2003 is known from Madagascar. Among the three species, only the female of *R. aglaophanes* Meyrick, 1935 is known.

The host-plants of *R. aglaophanes* Meyrick include *Euonymus alatus* (Thunb.) Sieb., *E. lanceolatus* Yatabe, *E. macropterus* Ruprecht, *E. melananthus* Franchet & Savatier, *E. oxyphyllus* Miq., *E. sieboldianus* Blume, and *Tripterygium regelii* Sprague & Takeda in the Celastraceae; and *Lonicera gracilipes* var. *glabra* Miq. in the Caprifoliaceae (Moriuti 1977; Oku 2003).

This paper reports this genus for the first time in China, and describes two new species. The type species are deposited in the Insect Collection of Nankai University, Tianjin, China.

### Taxonomy

#### Genus *Rhabdocosma* Meyrick, 1935

*Rhabdocosma* Meyrick, 1935, *Exotic Microlepidoptera*, 4: 603.

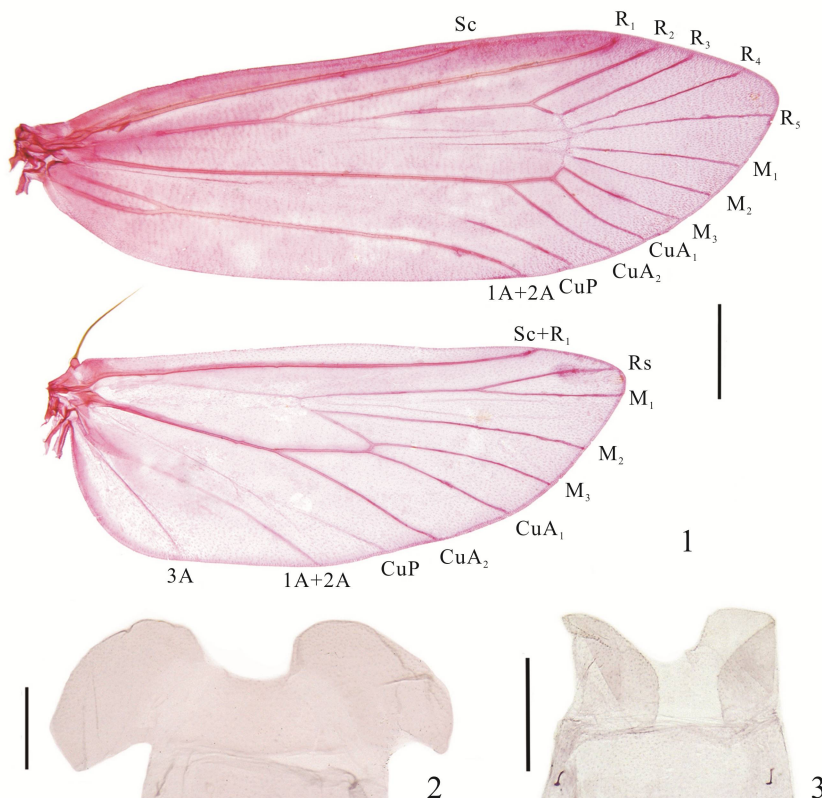
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Type species: *Rhabdocosma aglaophanes* Meyrick, 1935.

General characters. Adult. Vertex smooth or rough. Antenna ciliate. Labial palpus porrect, smooth or with rough scales (Fig. 4); third palpomere as long as or shorter than second, pointed terminally. Maxillary palpus short, three-segmented. Forewing with costal margin slightly arched before apex. Venations: forewing with twelve veins (Fig. 1),  $R_1$  from before middle,  $R_3$  from upper angle of cell,  $R_4$  and  $R_5$  separated,  $CuA_1$  from lower angle of cell,  $CuA_2$  before lower angle,  $CuP$  weak, accessory cell present; hindwing usually with eight veins,  $Sc$  and  $R_1$  coincident or long-stalked,  $R_5$  and  $M_1$  long-stalked,  $M_2$  almost parallel with  $M_3$ ,  $M_3$  and  $CuA_1$  close or coincident at base,  $CuA_2$  usually from 3/4 of cell,  $CuP$  present. Hind tibia smooth, median spur at middle.

Male genitalia. Uncus approximately rectangular. Socius slender, pointed terminally. Tubia analis membranous. Ventral plate of gnathos developed, covered with denticles. Valva rounded terminally, often covered with long setae in distal half; costa slender, not reaching apex of valva; transtilla hooked and terminally pointed if present. Vinculum usually arched. Phallus stout, with coecum; cornuti consisting of two clusters of 3–10 thick spines. Coremata absent.



Figures 1–3. Morphology of *Rhabdocosma* spp. 1, 2. *R. aurepurpurata* Li sp. nov.; 3. *R. semicircularis* Li sp. nov. 1. Wing venation (slide no. JQ07349); 2, 3. Pleural lobes (2. slide no. JQ07349; 3. slide no. JQ08218). Scale bars = 1.0 mm (Fig. 1); 0.5 mm (Figs. 2, 3).

Female genitalia. Intersegmental membrane between papilla analis and lamella postvaginalis extraordinarily extended. Ostium bursae broad; antrum large, nearly cupped, with a broad sclerotized band at anterior end; ductus and corpus bursae membranous throughout; inception of ductus seminalis a little before antrum (Moriuti 1977).

Distribution. Palaearctic Region, Ethiopian Region.

Diagnosis. This genus is similar to *Ypsolopha* Latreille, 1976 in the genitalia, but differs in the labial palpus smooth or with rough scales; the absence of the coremata, and the cornuti consisting of two clusters of 3–10 spines in the male genitalia; and the signum edged with denticles but absent of a transverse ridge in the female genitalia. In *Ypsolopha*, the labial palpus is well tufted in the second palpomere; the coremata is present and the cornuti usually consist of two large thorns in the male genitalia; and the signum is not edged with denticles, but has one or two transverse ridges in the female genitalia. Besides, these two genera are apparently different in the pleural lobes of the abdominal segment VIII. In *Rhabdocosma*, the pleural lobes are shorter and remote from each other (Figs. 2, 3) while they are longer and closer to each other in *Ypsolopha*.

The genus *Rhabdocosma* is recorded for the first time in China.

1. ***Rhabdocosma aurepurpurata* Li sp. nov.** (Figs. 1, 2, 4, 5, 7)

Adult (Fig. 5). Wingspan 16.0–18.0 mm. Head deep grayish brown, vertex rough, frons smooth. Antenna 3/4 length of forewing, ciliate; basal half deep brown, with purplish luster, distal half white. Labial palpus rough, with fluffy scales, dark grayish brown on outer surface, grayish brown on inner surface; third palpomere as long as second, pointed terminally. Thorax and tegula deep brown, with purplish luster. Forewing grayish brown on basal 3/4, dark brown on distal 1/4, with purplish and golden reflection; cilia grayish brown. Hindwing nearly as broad as forewing, pale grayish brown; cilia concolorous with hindwing. Legs gray except fore leg with tibia and tarsus deep grayish brown. Abdomen grayish brown on dorsal surface, grayish white on ventral surface.

Male genitalia (Fig. 7). Uncus rectangular, slightly concave at middle on posterior margin. Socius about two times length of saccus, basal 3/4 straight, parallel, distal 1/4 narrowing to pointed apex, bent outward. Gnathos with lateral arms 2.3 times length of ventral plate; ventral plate tongue-shaped, covered with dense denticles. Tubia analis with a sclerotized central band on ventral surface. Tegumen with posterior 1/5 trapezoid, anterior 4/5 rectangular. Valva broadened from base to before apex, apex obtusely rounded, ventral margin shallowly concave at middle; costa sclerotized, almost reaching apex of valva; transtilla hooked, pointed terminally. Vinculum arched. Saccus short, slightly dilated distally. Phallus stout, almost as long as valva, slightly curved at middle; coecum about 1/3 length of phallus; cornuti consisting of two clusters of spines, each with three stout spines.

Female unknown.

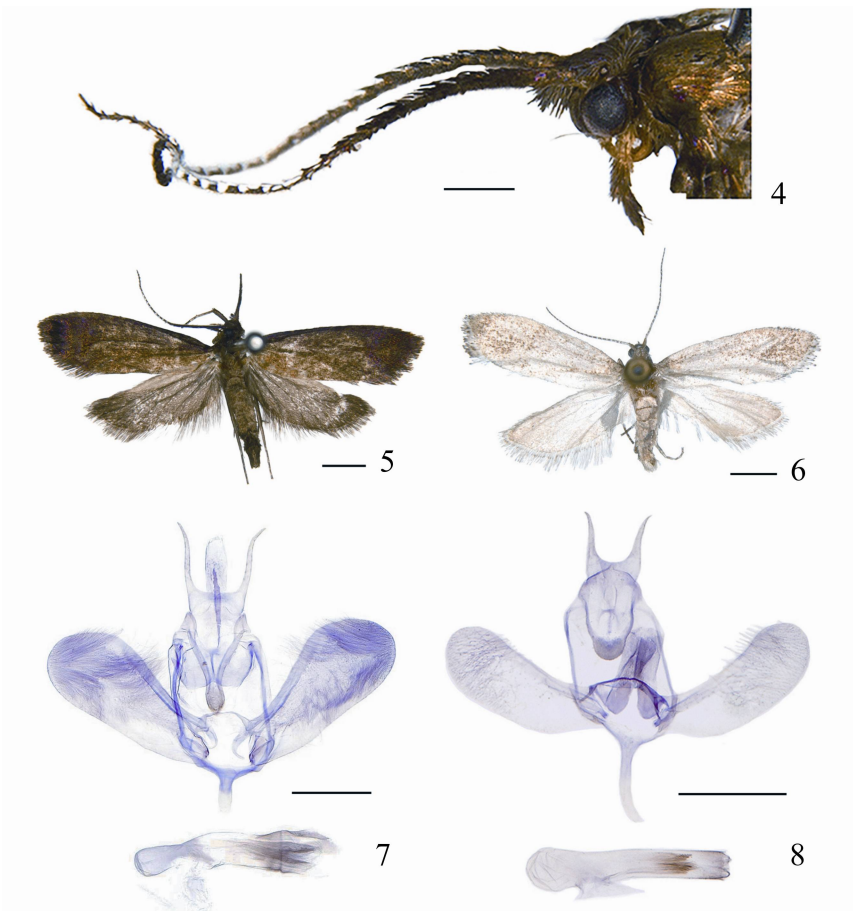
**Holotype.** ♂, China, Henan, Baotianman, Neixiang County, 33°21'N, 111°53'E, 1200 m, 27-V-2006, coll. Xu ZHANG & Jinmei LV, slide No. JQ07349. **Paratypes.** 3♂, 23–29-V-2006, other data same as holotype.

Distribution. China (Henan).

Diagnosis. This species is similar to *R. aglaophanes* Meyrick, 1935 externally and internally. It can be distinguished by the rough labial palpus with fluffy scales, and the valva

with dorsal margin smooth, and the phallus with each of the two clusters consisting of three stout spines in the male genitalia. In *R. aglaophanes*, the labial palpus is smooth, and the valva is obviously protuberant at dorsal 2/3, and the phallus has seven stout spines in each of the two clusters in the male genitalia.

**Etymology.** The specific epithet is derived from the Latin prefix *aure-*, meaning gold, and the Latin *purpuratus*, meaning purplish, referring to the forewing with purplish and golden reflection.



Figures 4–8. Adults and genitalia of *Rhabdocosma* spp. 4, 5, 7. *R. aurepurpurata* Li sp. nov.; 6, 8. *R. semicircularis* Li sp. nov. 4–6. Adults; 7, 8. Male genitalia (7. slide no. JQ07349; 8. slide no. JQ08218). Scale bars = 0.5 mm (Figs. 4, 7, 8); 2.0 mm (Figs. 5, 6).

## 2. *Rhabdocosma semicircularis* Li sp. nov. (Figs. 3, 6, 8)

**Adult** (Fig. 6). Wingspan 17.0 mm. Head white, vertex smooth, frons rough. Antenna 2/3 length of forewing, ciliate; scape grayish white, mixed with deep brown on inner surface; flagellum brown, ringed with white. Labial palpus white, mixed with black on third palpomere; second palpomere with rough scales; third palpomere almost as long as second palpomere, pointed apically. Thorax and tegula white. Forewing broad lanceolate; ground color white, covered with brown scales (torn); cilia white, tipped brown. Hindwing white, mixed with

brown scales on distal 1/2; costal margin straight, outer margin obliquely inward, tornus obtusely rounded; cilia white, with a brown line at basal 1/3. Legs white, mixed with yellowish brown, tarsi deep grayish brown. Abdomen white, mixed with yellowish brown on ventral surface.

Male genitalia (Fig. 8). Uncus saddle-shaped, concave on both anterior and posterior margins. Socius about 2/5 length of saccus, conical, broad basally, narrowing to a point distally. Gnathos with lateral arms 2.7 times length of ventral plate; ventral plate semicircular, with dense denticles. Tegumen with posterior 1/4 almost triangularly shaped, anterior 3/4 rectangular. Valva elongate, basal 1/4 narrow, distal 3/4 parallel, ventral margin with basal 1/4 truncate, apex rounded. Vinculum arched. Saccus about 1/2 length of valva, parallel, slightly narrowing distally. Phallus stout, almost straight, coecum dilated; cornuti at distal 4/5, composed of two rows of spines different in length, one with ten spines, another with six spines.

Female unknown.

**Holotype.** ♂, **China**, Shaanxi, Louguantai, 34°04'N, 108°11'E, 590 m, 10-V-1995, coll. Aisihaer Mamati by sweep net, slide No. JQ08218. **Paratypes.** 2♂, 10–14-V-1995, other data same as holotype.

Distribution. China (Shaanxi).

Diagnosis. This species is similar to *R. nematopogonites* Sohn, 2014 in the male genitalia, but can be distinguished by the socius about 2/5 the length of the saccus, the semicircular ventral plate of the gnathos, and the valva with basal 1/4 of ventral margin truncate; in *R. nematopogonites*, the socius is as long as the saccus, the ventral plate of the gnathos is tongue shaped, and the valva is arched on basal 1/4 of the ventral margin.

Etymology. The specific epithet is derived from the Latin prefix *semi-*, meaning half, and the Latin *circularis*, meaning round, referring to the half rounded ventral plate of the gnathos.

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